Science Toolkit: Grade 5 Objective 1.A.1.g

Student Handout: Science: Grade 5 Objective 1.A.1.g

Standard 1.0 Skills and Processes

Topic A. Constructing Knowledge

Indicator 1. Gather and question data from many different forms of scientific investigations which include reviewing appropriate print resources, observing what things are like or what is happening somewhere, collecting specimens for analysis, and doing experiments.

Objective g. Judge whether measurements and computations of quantities are reasonable in a familiar context by comparing them to typical values when measured to the nearest:

- Millimeter - length
- Square centimeter - area
- Milliliter - volume
- Newton - weight
- Gram - mass
- Second - time
- Degree C - temperature

Selected Response (SR) Item

Question

Use the passage 'Space Shuttle Re-entry' to answer the following question.

Which measurement best represents the distance of the orbiting space shuttle from Earth?

A. 300 liters
B. 300 seconds
C. 300 kilograms
D. 300 kilometers

Correct Answer

D. 300 kilometers

Question

Use the passage 'Space Shuttle Re-entry' to answer the following question.

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Handouts

Space Shuttle Re-entry

The space shuttle program uses spaceships to carry humans from Earth to space and back again.

It takes a lot of fuel to produce the force needed to lift a space shuttle from Earth to space because the lift force must act against the force of gravity pulling down on the space shuttle. Much less fuel is needed to bring the space shuttle back to Earth. When the astronauts on a space shuttle complete a mission, they use the force of gravity acting on the space shuttle to pull it down from space to Earth's surface.

This landing process is not entirely without problems. Once the space shuttle moves from space into Earth's atmosphere, the space shuttle begins to hit air molecules. Although air is a gas, the space shuttle moves so quickly that it hits many air molecules with a great amount of force. Those hits result in friction with the air around the space shuttle. The friction slows the downward motion of the space shuttle and produces a large amount of heat.

Because of the heat produced, the space shuttle needs heat-resistant tiles so the inside of the space shuttle does not get too hot as it lands. The heat produced by the friction between the tiles and the atmosphere produces an orange glow as the shuttle moves toward Earth's surface.